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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,729	06/27/2003	Valentine J. Rhodes	1020.P16727	6499

59796 7590 03/26/2008

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EXAMINER	
QURESHI, AFSAR M	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
03/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/607,729	RHODES, VALENTINE J.	
	Examiner	Art Unit	
	AFSAR M. QURESHI	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/27/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. This Office Action is responsive to amendment received on 2/26/2008. Claims are entered as amended.

2. RCE received, 2/26/2008 is made of record.

Response to Arguments

3. Applicant's arguments filed 2/26/2008 have been fully considered but they are not persuasive.

Applicant's argument is directed to the limitations previously responded to, in Final Rejection, dated 9/26/2007. However, the added cited art, Ketchum, clearly disclose the functionality of 'puncturing' by selectively deleting some symbols/bits and, inadvertently, by *not adding any information*. In general, 'data puncturing' means that some parity symbols are dropped, i.e., deleting unsent transmit data and adjusting transmission rates. Given the broader interpretation to the claim, it would be obvious to one of ordinary skill in the art that the puncturing technique applied by Ketchum is same as intended by the Applicant. There is no limitation whereby the claim is limited by "not adding or deleting any information".

Additionally, Examiner maintains that all the limitations have been addressed in view of the cited combined invention as stated in the rejection below.

4. ***The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action***.

5. Claims 1-8, 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chini et al. (us 2002/0191533) in view of Ketchum (US 2003/0072379).

As to claims 1-4, 11 and 17, Chini discloses a multicarrier communication system comprising a transmitter 500 (fig. 5) having channel knowledge wherein transmitter and receiver determine the channel knowledge. Transmitter by sending a channel information request to the receiver 550 (fig. 5) to characterize all carriers associated with the channel link and receiver analyzes the received signal and characterizes the data placed on each carrier, transmitter receives an out put of the *carrier map* indicating the channel knowledge of communication link to puncture (deleting code symbols periodically from the sequence for purpose of constructing a higher rate code and deleting parity bits (see [0041], [0029] and [0030]). As to claim 17, Chini further discloses a processing unit 400 coupled to receiver and a memory 410 which can also function as a form of SRAM (it caches data traveling between two MCM systems) (see [0025] and fig. 4). As to claim 2, the transmitter, disclosed by Chini, is an OFDM transmitter (see [0029]).

As to claims 5-8, 10, 12-16 and 18-20 as discussed in the rejection of claim 1 above, Chini is concerned with multi-path fading, interference in the same field of endeavor as the current invention, and obtains channel knowledge from these activities and devices

therein (see [0003]-[0007]). Chini further discloses puncturing the carrier by placing energy without including data wherein in other subcarriers do not require placing energy that are in reliable state. Chini also discloses that the energy is also placed into the punctured subcarrier to reduce peak to average power ratio (see {0004], [0006] and [0021] and figs. 1-2).

As to claims 1, 11 and 17, Chini discloses identifying unreliable carriers. However, Chini fails to specifically disclose that the unreliable carriers, or the carriers that suffer from channel impairments from a plurality of carriers are punctured prior to transmission by placing no information in the selected carriers and transmitted power is re-allocated to information carrying carriers (subcarriers).

Ketchum discloses a method and apparatus for determining power allocation and one of the techniques is to use fixed base code to encode data and the coded bits for each transmission channel are then punctured prior to transmission (i.e., selectively deleted). Power is re-allocated to different channels carrying information, Ketchum further discloses maintaining the optimal value of SNR since the slope of the error rate drops rapidly as the SNR increases (see [0018]).

Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to be able to utilize coding techniques and selectively deleting subcarriers that suffer from link conditions such as fading in order to effectively and efficiently allocating power to different channels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AFSAR M. QURESHI whose telephone number is (571)272-3178. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Field Lynn can be reached on (571) 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Afsar M Qureshi/
Primary Examiner
Art Unit 2616

3/17/2008